SPEC® CFP2006 Result

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NTT System S. A.

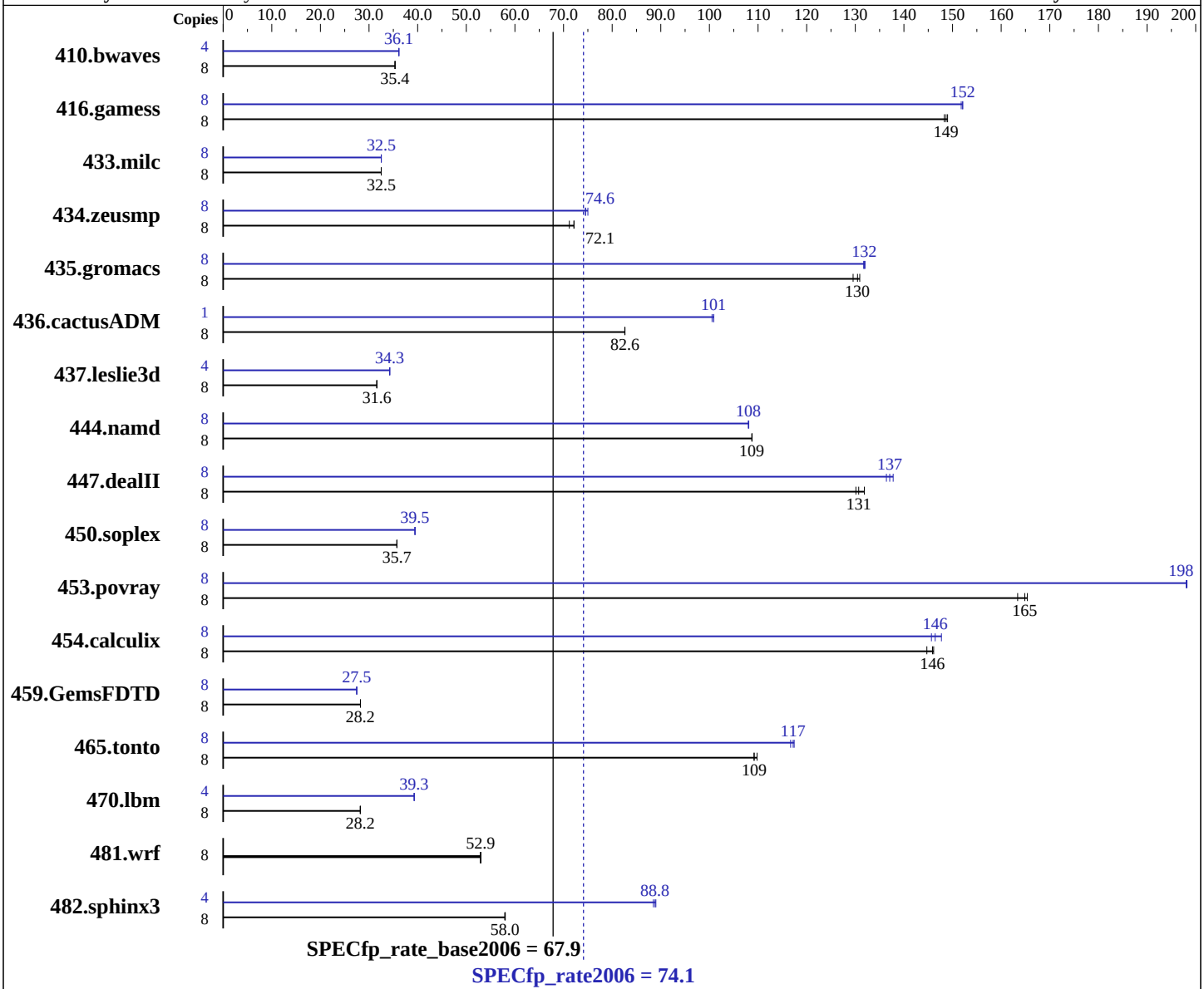
NTT Tytan S6 Series (Intel Xeon E5420)

SPECfp®_rate2006 = 74.1

SPECfp_rate_base2006 = 67.9

CPU2006 license: 9013
Test sponsor: NTT System S. A.
Tested by: NTT System S. A.

Test date: Mar-2009
Hardware Availability: Jan-2009
Software Availability: Nov-2008



Hardware

CPU Name:	Intel Xeon E5420
CPU Characteristics:	2.5 GHz, 2x6 MB p2 shared, 1333 MHz System Bus
CPU MHz:	2500
FPU:	Integrated
CPU(s) enabled:	8 cores, 2 chips, 4 cores/chip
CPU(s) orderable:	1,2 chips
Primary Cache:	32 KB I + 32 KB D on chip per core
Secondary Cache:	12 MB I+D on chip per chip, 6 MB shared / 2 cores

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Software

Operating System:	SUSE LINUX Enterprise Server 10 SP2, Kernel 2.6.16.60-0.21-smp
Compiler:	Intel C++ and Fortran Compiler 11.0 for Linux Build 20080930 Package ID: l_cproc_p_11.0.066, l_cprof_p_11.0.066
Auto Parallel:	Yes
File System:	ReiserFS
System State:	Run level 3 (multi-user)
Base Pointers:	64-bit

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L3 Cache: None
Other Cache: None
Memory: 16 GB (4 x 4GB DDR2-667 FBDIMM)
Disk Subsystem: 250 GB SATA, 7200RPM
Other Hardware: None

Peak Pointers: 32/64-bit
Other Software: None

Results Table

Benchmark	Base							Peak						
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
410.bwaves	8	3074	35.4	3077	35.3	**3075**	**35.4**	4	1505	36.1	1504	36.1	**1504**	**36.1**
416.gamess	8	1056	148	**1054**	**149**	1051	149	8	1032	152	**1030**	**152**	1030	152
433.milc	8	2259	32.5	**2259**	**32.5**	2259	32.5	8	**2258**	**32.5**	2258	32.5	2259	32.5
434.zeusmp	8	1009	72.2	**1009**	**72.1**	1023	71.2	8	**976**	**74.6**	977	74.5	971	75.0
435.gromacs	8	**438**	**130**	436	131	441	130	8	**433**	**132**	433	132	434	132
436.cactusADM	8	1157	82.6	**1157**	**82.6**	1158	82.6	1	118	101	119	101	**118**	**101**
437.leslie3d	8	2380	31.6	**2379**	**31.6**	2378	31.6	4	1099	34.2	1096	34.3	**1098**	**34.3**
444.namd	8	**590**	**109**	590	109	590	109	8	**594**	**108**	594	108	594	108
447.dealII	8	703	130	**700**	**131**	694	132	8	664	138	671	136	**668**	**137**
450.soplex	8	1868	35.7	1866	35.8	**1867**	**35.7**	8	1693	39.4	1690	39.5	**1691**	**39.5**
453.povray	8	**258**	**165**	257	165	260	163	8	215	198	215	198	**215**	**198**
454.calculix	8	456	145	**452**	**146**	452	146	8	447	148	453	146	**451**	**146**
459.GemsFDTD	8	**3007**	**28.2**	3006	28.2	3007	28.2	8	3088	27.5	3092	27.4	**3088**	**27.5**
465.tonto	8	717	110	**721**	**109**	721	109	8	670	117	675	117	**672**	**117**
470.lbm	8	3897	28.2	3896	28.2	**3896**	**28.2**	4	1398	39.3	1399	39.3	**1399**	**39.3**
481.wrf	8	1685	53.0	**1688**	**52.9**	1689	52.9	8	1685	53.0	**1688**	**52.9**	1689	52.9
482.sphinx3	8	**2689**	**58.0**	2692	57.9	2687	58.0	4	876	89.0	881	88.5	**878**	**88.8**

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Submit Notes

```
The config file option 'submit' was used.
 taskset was used to bind processes to cores except
 for 436.cactusADM peak
 OMP_NUM_THREADS set to number of processors
 KMP_AFFINITY set to "physical,0"
 KMP_STACKSIZE set to 64M
```

Base Compiler Invocation

C benchmarks:

```
icc
```

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Base Compiler Invocation (Continued)

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Base Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
437.leslie3d: -DSPEC_CPU_LP64
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
450.soplex: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX
482.sphinx3: -DSPEC_CPU_LP64

Base Optimization Flags

C benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

C++ benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Fortran benchmarks:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Benchmarks using both Fortran and C:
-xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

Peak Compiler Invocation

C benchmarks:
icc

C++ benchmarks:
icpc

Fortran benchmarks:
ifort

Benchmarks using both Fortran and C:
icc ifort

Peak Portability Flags

410.bwaves: -DSPEC_CPU_LP64
416.gamess: -DSPEC_CPU_LP64
433.milc: -DSPEC_CPU_LP64
434.zeusmp: -DSPEC_CPU_LP64
435.gromacs: -DSPEC_CPU_LP64 -nofor_main
436.cactusADM: -DSPEC_CPU_LP64 -nofor_main
444.namd: -DSPEC_CPU_LP64
447.dealII: -DSPEC_CPU_LP64
453.povray: -DSPEC_CPU_LP64
454.calculix: -DSPEC_CPU_LP64 -nofor_main
459.GemsFDTD: -DSPEC_CPU_LP64
465.tonto: -DSPEC_CPU_LP64
470.lbm: -DSPEC_CPU_LP64
481.wrf: -DSPEC_CPU_LP64 -DSPEC_CPU_CASE_FLAG -DSPEC_CPU_LINUX

Peak Optimization Flags

C benchmarks:

433.milc: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias

470.lbm: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch
-auto-ilp32

482.sphinx3: -m32 -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2

C++ benchmarks:

444.namd: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3
-no-prec-div -static -fno-alias -auto-ilp32

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Peak Optimization Flags (Continued)

447.dealII: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -ansi-alias -scalar-rep-

450.soplex: -m32 -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-malloc-options=3

453.povray: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4 -ansi-alias

Fortran benchmarks:

410.bwaves: -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch

416.gamess: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -ansi-alias -scalar-rep-

434.zeusmp: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static

437.leslie3d: -m32 -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-malloc-options=3 -opt-prefetch

459.GemsFDTD: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -Ob0 -opt-prefetch

465.tonto: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll4 -auto

Benchmarks using both Fortran and C:

435.gromacs: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -opt-prefetch -auto-ilp32

436.cactusADM: -prof-gen(pass 1) -prof-use(pass 2) -xSSE4.1 -ipo -O3 -no-prec-div -static -unroll2 -opt-prefetch -parallel -auto-ilp32

454.calculix: -xSSE4.1 -ipo -O3 -no-prec-div -static -auto-ilp32

481.wrf: basepeak = yes

The flags files that were used to format this result can be browsed at
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.03.html
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.html

You can also download the XML flags sources by saving the following links:
http://www.spec.org/cpu2006/flags/Intel-ic11.0-fp-linux64-revA.20090710.03.xml
http://www.spec.org/cpu2006/flags/Intel-Linux64-Platform.20090710.xml

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